

September 1, 2010

Mr. Joseph Plona, Site Vice President
Nuclear Generation
The Detroit Edison Company
6400 North Dixie Highway
Newport, MI 48166

SUBJECT: NRC INSPECTION REPORT 050-00016/10-09(DNMS) - ENRICO
FERMI UNIT 1

Dear Mr. Plona:

On August 5, 2010, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Enrico Fermi Unit 1 facility. The purpose of the inspection was to determine whether decommissioning activities were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection on August 5, 2010, the NRC inspector discussed the findings with members of your staff.

The inspection consisted of an examination of activities at the facility as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspection included facility management and control, radiological safety and your implementation of the Industry Ground Water Protection Voluntary Initiative. Within these areas, the inspection consisted of a selective examination of procedures and representative records, field observations of activities in progress, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations.

In accordance with Title 10 Code of Federal Regulations (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Document Access and Management system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

J. Plona

-2-

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Christine A. Lipa, Chief
Materials Control, ISFSI, and
Decommissioning Branch

Docket No. 050-00016

License No. DPR-9

Enclosure:

Inspection Report 050-00016/10-09(DNMS)

cc w/encl: L. Goodman, Manager, Fermi 1
W. Colonnello, Director, Nuclear Support
Michigan Department of Environmental Quality,
Waste and Hazardous Materials Division
K. Yale, Chief, State Liaison Officer, State of Michigan
Supervisor - Electric Operators,
Wayne County Emergency Management Division

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No. 050-00016

License No. DPR-9

Report No. 050-00016/10-09(DNMS)

Licensee: Detroit Edison Company

Facility: Enrico Fermi Unit 1

Location: 6400 North Dixie Highway
Newport, MI 48166

Inspection Dates: June 10, 2010 (Ground Water
Protection Initiative)
August 4 and 5, 2010 (Decommissioning)

Inspector: Peter J. Lee, Ph.D., CHP, Health Physicist
Mark Mitchell, Health Physicist

Approved by: Christine A. Lipa, Chief
Materials Control, ISFSI, and
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Enrico Fermi Unit 1 NRC Inspection Report 050-00016/10-09(DNMS)

This routine decommissioning inspection included reviews of facility management and control, and radiological safety. A region-based inspector also completed an on-site review of the implementation of the Industry Ground Water Protection Initiative.

Facility Management and Control

- The inspector determined that the licensee's safety evaluation of cutting the reactor vessel was in compliance with the requirements of Title 10 Code of Federal Regulations (CFR) Part 50.59 and the dose to the general public is bounded by the licensee's final safety analysis report, accident analyses of airborne release. (Section 1.1)
- The inspector determined that the licensee maintained adequate staffing levels and training to effectively continue the decommissioning process. (Section 1.2)
- The inspector concluded that the conditions of the facility and equipment were adequate and capable of supporting the decommissioning activities. (Section 1.3)
- The inspector determined that the licensee adequately implemented the audits of radiation protection in accordance with its Quality Assurance Program. (Section 1.4)

Radiological Safety

- The inspector determined that the licensee continued to be effective in preventing the spread of contamination and in maintaining dose to workers well below the regulatory limits. (Section 2.1)

Industry Ground Water Protection Voluntary Initiative

- The inspectors verified that the licensee implemented the Industry Ground Water Protection Voluntary Initiative. No findings or violations were identified.

Report Details¹

Summary of Plant Activities

During the inspection period, the licensee was performing decommissioning activities, specifically cutting the upper section of reactor vessel and preparing for the removal of reactor vessel segments.

1.0 Facility Management and Control

1.1 Safety Reviews, Design Changes, and Modifications (IP 37801)

a. Inspection Scope

The inspector reviewed the licensee's safety evaluation of cutting the reactor vessel (RV) to verify that the completed evaluation was consistent with the requirements of 10 CFR Part 50.59.

b. Observations and Findings

The licensee conducted the safety evaluation of cutting the reactor vessel against the final safety analysis report (FSAR). There are two possible sources of the radioactivity that could transfer from the RV to the HEPA filter; one is the internal surface contamination of the RV and the other is the activation products in the fine particles generated during the cutting. The postulated accident that would potentially release the contamination activity and fines activity entrained in a HEPA filter would be a fire that occurs and engulfs the filter. The calculated dose is based on the conservative assumption that 100% of the activity would become airborne. Based on the above assumptions, the calculated dose to the general public is below the current FSAR accident analyses of airborne release. Since most of the cutting won't generate airborne or respirable activity, the actual dose should be much lower.

c. Conclusions

The inspector determined that the licensee's safety evaluation of cutting the reactor vessel was in compliance with the requirements of 10 CFR Part 50.59 and the dose to the general public is bounded by FSAR accident analyses of airborne release.

1.2 Organization, Management and Cost Controls (36801)

a. Inspection Scope

The inspector evaluated the licensee's decommissioning staffing to determine whether the licensee maintained adequate staffing levels to effectively conduct its decommissioning activities. The inspector reviewed records of the required training for the licensee personnel and contractor workers.

¹A list of acronyms used and all documents reviewed in these "Details" are provided at the end of the report.

b. Observations and Findings

The licensee conducted training for licensee personnel and contractor workers in accordance with the provisions of the licensee's training program. The training included topics such as radiation protection, sodium handling safety, asbestos awareness, and confined space safety.

c. Conclusions

The inspector determined that the licensee maintained adequate staffing levels and training to effectively continue the decommissioning process.

1.3 Decommissioning Performance and Status Review at Permanently Shut Down Reactors

a. Inspection Scope (71801)

The inspector toured the plant to assess the working conditions during the decommissioning activities.

b. Observations and Findings

During the inspection, contract workers were cutting the upper section of the reactor vessel and preparing for the removal of reactor vessel segments. Workers wore appropriate protective equipment and followed established procedures. The licensee maintained the work location with adequate shielding, personnel barriers, and high efficiency particulate air (HEPA) filter exhaust systems, all to minimize worker doses. All radiological areas were adequately marked and posted.

c. Conclusions

The inspector concluded that the conditions of the facility and equipment were adequate and capable of supporting the decommissioning activities.

1.4 Self-Assessment, Auditing, and Corrective Action (40801)

a. Inspection Scope

The inspector reviewed the licensee's audit of its radiation protection program (Audit 09-0112) conducted from October 26, through November 13, 2009. Selected corrective action work orders associated with identified deficiencies were also reviewed.

b. Observations and Findings

The audit of the radiation protection program (Audit 09-0112) was appropriately focused in both scope and level of detail, and the licensee initiated appropriate corrective actions to resolve the audit findings.

c. Conclusions

The inspector determined that the licensee adequately implemented the audits of radiation protection in accordance with its Quality Assurance Program.

2.0 Radiological Safety

2.1 Occupational Radiation Exposure (83750)

a. Inspection Scope

The inspector interviewed licensee personnel and reviewed the work request and the as-low-as-reasonably-achievable review (ALARA) review for the cutting up and the removal of the reactor vessel segments to evaluate the effectiveness of licensee controls to minimize the potential radiation exposure to the workers.

b. Observations and Findings

The ALARA review provided the administrative controls to minimize or avoid unnecessary dose to the workers. The engineering controls such as enclosures with additional HEPA ventilation and shielding were effectively controlling the workers' internal and external exposures, and the spread of contamination.

Most of the contamination generated during the cutting operation would not be expected to become airborne. There may be some airborne contaminants but most of them are irrespirable. Therefore, there is no internal radiation exposure concerns for the worker.

The cutting operation is done through remote control via camera. Also a telemetry system is currently in use in the reactor area to remotely control the workers' exposures. Because of that, the workers external exposures will be significantly reduced to levels that are ALARA.

c. Conclusions

The inspector determined that the licensee continued to be effective in preventing the spread of contamination and in maintaining dose to workers well below the regulatory limits.

3.0 **(Closed) NRC Temporary Instruction 2515/173 Review of the Industry Groundwater Protection Voluntary Initiative for Fermi Unit 1 (The Fermi 2 program review was previously completed and is documented in IR No. 050-00341/10-02)**

a. Inspection Scope

An NRC assessment was performed on the licensee's implementation of the Nuclear Energy Institute – Ground Water Protection Initiative (NEI-GPI) (dated August 2007 (ML072610036)), at the Fermi Power Plant. Under the voluntary initiative, each nuclear plant site was to have developed an effective, technically sound groundwater protection program that aligned with the NEI initiative by August 2008.

The inspectors assessed whether the licensee evaluated work practices that could lead to leaks, spills, and performed an evaluation of systems, structures, and components, that contain licensed radioactive material to determine potential leak or spill mechanisms.

The inspectors determined whether the licensee completed a site characterization of geology and hydrology to determine the predominant ground water gradients and potential pathways for ground water migration from onsite locations to offsite locations. The inspectors also determined whether an onsite ground water monitoring program had been implemented to monitor potential licensed radioactive leakage into groundwater and whether the licensee had provisions for reporting its ground water monitoring results. (See <http://www.nrc.gov/reactors/operating/ops-experience/tritium/plant-info.html>)

The inspectors reviewed the licensee's procedures for the decision making process for potential remediation of leaks and spills, including consideration of the long term decommissioning impacts. The inspectors also determined whether records of leaks and spills were being recorded in the licensee's decommissioning files in accordance with 10 CFR 50.75(g).

The inspectors reviewed the licensee's notification protocols to determine whether they were consistent with the Groundwater Protection Initiative. The inspectors assessed whether the licensee identified the appropriate local and state officials and conducted briefings on the licensee's ground water protection initiative. The inspectors also assessed whether protocols were established for notification of the applicable local and state officials regarding detection of leaks and spills.

b. Observations and Findings

No findings of significance were identified.

c. Conclusions

The inspectors verified that the licensee implemented the Industry Ground Water Protection Voluntary Initiative. No findings or violations were identified.

4.0 Exit Meetings

- The inspector presented the inspection results to members of the licensee's staff at the conclusion of the inspection on August 5, 2010. The licensee did not identify any of the documents or processes reviewed by the inspector as proprietary.
- The results of Temporary Instruction 2515/173 Review of the Industry Groundwater Protection Voluntary Initiative inspection were discussed with the Manager, Fermi I, Ms. L. Goodman, on June 10, 2010. The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

- * L. Goodman, Manager, Fermi 1
W. Colonnello, Director, Nuclear Support, Fermi 1
- *S. Stasek, Chairman, Review Committee, Fermi 1
- *M. Erickson, License Termination Manager
- * K. Lindsey, Radiation Protection Supervisor
D. Breiding, Reactor Project Manager
D. Swindle, Sodium Project Manager
- * C. Aldridge-Nunn, Office Administration
- * L. Davis, Office Specialist

* Present at the August 5, 2010, exit meeting.

LIST OF PROCEDURES USED

- IP 37801: Safety Reviews, Design Changes, and Modifications
- IP 83750: Occupational Radiation Exposure
- IP 71801: Decommissioning Performance and Status Review at Permanently Shut Down Reactors
- IP 36801: Organization, Management and Cost Controls
- IP 40801: Self-Assessment, Auditing, and Corrective Action
- TI 2515/173 Review of the Industry Ground Water Protection Voluntary Initiative

LIST OF ACRONYMS USED

- ADAMS Agency Document and Management System
- ALARA As Low as is Reasonably Achievable
- CFR Code of Federal Regulations
- DAC Derived Air Concentrations
- DNMS Division of Nuclear Materials Safety
- FSAR Final Safety Analysis Report
- HEPA High Efficiency Particulate Air
- IP Inspection Procedure
- NRC Nuclear Regulatory Commission
- TI Temporary Instruction

LICENSEE DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

4OA5 Other Activities

EF 1-04-017, Work Request for Ground Water Environmental Sampling; February 2004

EF 1-10-002, Work Request Procedure; Revision 113

06-0059, 2006 Annual Environmental Report; dated August 28, 2006

07-0048, 2007 Annual Environmental Report; dated August 27, 2007

ITEMS OPENED, CLOSED, AND DISCUSSED

None

J. Plona

-2-

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Christine A. Lipa, Chief
Materials Control, ISFSI, and
Decommissioning Branch

Docket No. 050-00016
License No. DPR-9

Enclosure:
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cc w/encl: L. Goodman, Manager, Fermi 1
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Waste and Hazardous Materials Division
K. Yale, Chief, State Liaison Officer, State of Michigan
Supervisor - Electric Operators,
Wayne County Emergency Management Division

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